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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,904	01/20/2005	Jann Blonn	2002P11788WOUS	7117

7590 10/30/2006

Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
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EXAMINER	
CASAREGOLA, LOUIS J	
ART UNIT	**PAPER NUMBER**
3746	

DATE MAILED: 10/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

NT

Office Action Summary	Application No.	Applicant(s)	
	10/521,904	BLONN ET AL.	
	Examiner	Art Unit	
	Louis J. Casaregola	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *16-30* is/are pending in the application.

4a) Of the above claim(s) *19,22,23,29,30* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16-18,20,21,24-28* is/are rejected.

7)☒ Claim(s) *16-18,20,21,24-28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date ------.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Species Election

This application encompasses six different species of the inventive subject matter as represented by the six embodiments shown respectively in Figures1-6. These species constitute patentably distinct inventions (35 USC 121) and lack unity of inventtion (PCT Rule 13.1) because the species are not so linked as to form a single inventive concept and they lack the same special technical features relating to the claimed cooling system. Each of the listed species can be used separately and has a unique coolant flow and heat exchange circuit substantially different from those of the other species. Applicants are therefore required to (1) elect a single disclosed species and (2) list all claims readable on the elected species including any claims subsequently added.

There appear to be several generic claims such as, for example, claim 1.

On 10/24/06, applicants' representative, Mr. John Musone, made a telephone election of the species of Figure 3. Following a discussion of the how the claims relate to the various different embodiments, it was concluded that claims 16-18, 20, 21 and 24-28 read on the elected species. The parallel heat exchange circuit in claim 19 and the auxiliary steam generator in claims 22, 23, 29 and 30 appear to be exclusive to non-elected species, and claims 19, 22, 23, 29, and 30 are consequently withdrawn from further consideration.

Objections To Claims & Specification

Claims 16-18, 20, 21 and 24-28 are objected to under 37 CFR 1.75(a) for the following reason:

Claims 16 and 24, along with related dependent claims 17, 18, 20, 21 and 25-28, require heat transfer between cooling air and "a combustion gas flow": see claim 16, line 8, and claim 24, line 4. This gas flow, shown as line 23 in the drawing figures, is also described by the specification as "a combustion gas flow"; see for example, page 8a, line 4. It appears that the cited expression includes a transcription or translation error. Line 23 as shown in the drawing represents a fuel flow. If the fuel is gas, flow 23 is a combustible gas flow but not "combustion" gas flow; the latter term is normally used to described products of combustion or exhaust gases. The claims and specification should therefore be amended to replace "combustion" with combustible at the indicated locations.

Claim Rejections - 35 USC 102

Claims 16-18, 21, 24, 25 and 28 are rejected under 35 USC 102(b) as being anticipated by Fujioka et al or Cloyd et al.

All features of the claimed gas turbine cooling system and method are present in prior art gas turbines of the type disclosed in either of the cited references. Attention is

called to Figure 5 of Fujioka; note gas turbine compressor C, the combustor (unnumbered) immediately downstream of the compressor, turbine T, cooling air extraction line 27, and heat exchange system elements 27-30. The heat exchange system operates to extract heat from cooling air line 27 at primary heat exchange side 28, and then transfer this heat at secondary heat exchange side 30 to the gas flow in the line labeled "FUEL GAS". Note also that loop 29 constitutes an intermediate circuit as required in claims 21 and 28.

Attention is additionally called to Figure 3 of Cloyd; note gas turbine compressor 2, combustor 3, turbine 4, cooling air extraction line 29, and heat exchange system 71. The heat exchange system operates to extract heat from cooling air line 29 at a primary heat exchange side (lower side of 71), and then transfer this heat at a secondary heat exchange side (upper side of 71) to fuel gas line 56. Note also that the individual heat pipes (unnumbered) within device 71 constitutes an intermediate circuit as required in claims 21 and 28.

Additional comment is in order with respect to claims 17 and 25. Claim 17 states that "the amount of heat supplied to the combustion [combustible] gas is changeable". This is considered a desired result, and if the broadly recited structure in the present claims is presumed capable of such a result, then the corresponding structure in the prior art can be presumed equally capable.

Claim 25 further states that "the amount of heat supplied to the combustion [combustible] gas flow is matched to the operating state of the gas turbine system".

This step is so broad that it reads on virtually any gas turbine engine which transfers heat from compressed air to fuel gas. For any given engine operating state, the heat supplied to the air is necessarily determined by the flow rate and discharge temperature of the engine's compressor at that state, and this relationship can be broadly construed as a "match" between the heat supplied and the turbine engine operating state.

Claims 20 and 27 are rejected under 35 USC 102(b) as being anticipated by Fujioka et al.

Attention is called to the alternative system shown in Fujioka's Figure 4; note that in this case, heat exchanger 26 has a secondary side connected directly with the fuel gas flow.

Claim 26 is rejected under 35 USC 102(b) as being anticipated by Cloyd et al.

The broadly claimed requirement for extracted heat to be "divided and supplied to a number of flow elements" is met by the flow division between the plural pipe units within Cloyd's heat exchange system 71.

Additional References

Kobayashi et al and Yu are cited as disclosing further pertinent examples of gas turbine systems that transfer heat between compressed air and fuel.

L. J. Casaregola
571-272-4826 (M-F; 7:30-4:00)
571-273-8300 FAX
October 25, 2006

If repeated attempts to reach the examiner by telephone are unsuccessful, the art unit supervisor, Ehud Gartenberg, can be reached at 571-272-4828.

Information regarding the status of this application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR, and status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).